

What we claim is:

1. A cartilage repair assembly for repair of a defect in an articular cartilage comprising an allograft bone plug having a subchondral bone and an overlying cartilage cap, said allograft bone plug having been treated to remove cellular debris and proteoglycans and an allograft milled cartilage mixture in a biocompatible carrier surrounding at least a portion of a side wall of said allograft bone plug.
2. A cartilage repair assembly as claimed in claim 1 wherein said allograft bone plug is cylindrically shaped.
3. A cartilage repair assembly as claimed in claim 1 wherein said allograft bone plug has an oval shaped cross section.
4. A cartilage repair assembly as claimed in claim 1 wherein said allograft bone plug has a cruciate shaped cross section.
5. A cartilage repair assembly as claimed in claim 1 wherein said allograft bone plug has a scalloped shaped cross section.
6. A cartilage repair assembly as claimed in claim 2 wherein said allograft bone plug has a diameter ranging from 1mm to 30mm.
7. A cartilage repair assembly as claimed in claim 2 wherein said allograft bone plug has a diameter ranging from about 4mm to about 10mm.
8. A cartilage repair assembly as claimed in claim 1 wherein said milled cartilage is hyaline cartilage.

9. A cartilage repair assembly as claimed in claim 1 wherein said milled cartilage is fibrocartilage.
10. A cartilage repair assembly as claimed in claim 1 wherein said milled cartilage is a mixture of fibrocartilage and hyaline cartilage.
11. A cartilage repair assembly as claimed in claim 1 including an additive consisting of one or more of a group consisting of growth factors, human allogenic cells, human autologous bone marrow cells, human allogenic bone marrow cells, stem cells, demineralized bone matrix, cartilage, and insulin.
12. A cartilage repair assembly as claimed in claim 11 wherein said demineralized bone matrix comprises bone powder having a size ranging from 200 to 850 microns and a weight ranging from 1% to 35% of the cartilage mixture.
13. A cartilage repair assembly comprising a sterile shaped structure of subchondral bone with an integral overlying cartilage cap, said shaped structure being dimensioned to fit in a drilled bore in a cartilage defect area so that said shaped bone and cartilage cap when centered in the bore does not engage the side wall of the bore in an interference fit, said shaped structure being treated to remove cellular debris and proteoglycans and sterile milled cartilage pieces mixed in a carrier surrounding said bone plug in said bore.
14. A cartilage repair assembly as claimed in claim 13 wherein said milled cartilage pieces are sized less than 1mm.
15. A cartilage repair assembly as claimed in claim 13 wherein said cartilage is allograft cartilage.
16. A cartilage repair assembly as claimed in claim 13 wherein said cartilage is autologous cartilage.

17. A cartilage repair assembly as claimed in claim 13 wherein said shaped structure has a shape taken from a group consisting of a cylinder, an oval, a cruciate, and scallop.
18. A cartilage repair assembly as claimed in claim 13 wherein said milled cartilage pieces and carrier includes an additive taken from one or more of a group consisting of growth factors, human allogenic cells, human bone autologous marrow cells, human allogenic bone marrow cells, stem cells, demineralized bone matrix, cartilage, and insulin.
19. A cartilage repair assembly as claimed in claim 18 wherein said demineralized bone matrix comprises bone powder having a size ranging from 200 to 850 microns and a weight ranging from 1% to 35% of the cartilage mixture.
20. A cartilage repair assembly as claimed in claim 13 wherein said carrier includes a bioabsorbable carrier consisting of one or more of a group consisting of sodium hyaluronate, gelatin, collagen, chitosan, alginate, buffered PBS, Dextran or polymers.
21. A cartilage repair assembly as claimed in claim 13 wherein said milled cartilage is hyaline cartilage.
22. A cartilage repair assembly as claimed in claim 13 wherein said milled cartilage is fibrocartilage.
23. A cartilage repair assembly as claimed in claim 13 wherein said milled cartilage is a mixture of fibrocartilage and hyaline cartilage.
24. A cartilage repair assembly comprising a sterile shaped structure of subchondral bone and overlying integral cartilage cap, said shaped structure been dimensioned to fit in a drilled bore in a cartilage defect are so that said shaped bone and hyaline cartilage cap when centered in the bore can be rotated in said bore, said bone plug being treated to remove cellular debris

and proteoglycans and sterile milled cartilage pieces mixed in a bioabsorbable carrier surrounding at least a portion of a side wall of shaped structure.

25. A cartilage repair assembly as claimed in claim 24 wherein said milled cartilage pieces are sized less than 1mm.

26. A cartilage repair assembly as claimed in claim 24 wherein said cartilage is hyaline allograft cartilage.

27. A cartilage repair assembly as claimed in claim 24 wherein said milled cartilage is fibrocartilage.

28. A cartilage repair assembly as claimed in claim 24 wherein said milled cartilage is a mixture of fibrocartilage and hyaline cartilage.

29. A cartilage repair assembly as claimed in claim 24 wherein said cartilage is autologous cartilage.

30. A cartilage repair assembly as claimed in claim 24 wherein said shaped structure has a shape taken from a group consisting of a cylinder, an oval, a cruciate, and scallop.

32. A cartilage repair assembly as claimed in claim 24 wherein said milled cartilage pieces and carrier include an additive taken from one or more of a group consisting of growth factor, human allogenic cells, human bone marrow cells, human autologous bone marrow cells, demineralized bone matrix, cartilage, and insulin.

33. A cartilage repair assembly as claimed in claim 24 wherein said demineralized bone matrix comprises bone powder having a size ranging from 200 to 850 microns and a weight ranging from 1% to 35% of the cartilage mixture.

34. A cartilage repair assembly as claimed in claim 24 wherein said bioabsorbable carrier is one or more of a group consisting of sodium hyaluronate, gelatin, collagen, chitosan, alginate, buffered PBS, Dextran or polymers.
35. A cartilage repair assembly kit comprising a sterile shaped structure of allograft subchondral bone and an overlying cartilage cap, said structure being treated to remove cellular debris and proteoglycans and housed in a first sterile container and milled allograft cartilage pieces mixed in a carrier housed in a second sterile container, said first and second sterile containers being packaged together.
36. A cartilage repair assembly kit as claimed in claim 35 wherein said cartilage pieces are allograft hyaline cartilage.
37. A cartilage repair assembly kit as claimed in claim 35 wherein said carrier includes an additive taken from one or more of a group consisting of growth factors, human allogenic cells, human allogenic bone marrow cells, human autologous bone marrow cells, stem cells, demineralized bone matrix, cartilage, and insulin.
38. A cartilage repair assembly kit as claimed in claim 35 wherein said carrier is a bioabsorbable carrier taken from a group consisting of sodium hyaluronate, gelatin, collagen, chitosan, alginate, buffered PBS, Dextran or polymers.
39. A method of placing a preshaped allograft implant assembly in a cartilage defect, said assembly comprising a subchondral bone and an overlying cartilage cap plug which has been treated to remove cellular debris and proteoglycans and minced cartilage in a carrier comprising the steps of:
- (a) drilling a hole in a patient at a site of a cartilage defect, a depth which equal to or less than the length of the bone and cartilage cap plug implant;

- (b) placing a preshaped osteochondral plug having a cross section which is less than the cross sectional area of the hole with a length which equal to the depth of the hole allowing the structure to be moveable within said bore in the cylindrical hole; and
- (c) placing a mixture of minced cartilage in a bioabsorbable carrier in the drilled cylindrical hole around the preshaped osteochondral plug.

40. A method as claimed in claim 39 wherein said hole is a cylindrical bore.

41. A method as claimed in claim 39 wherein said minced cartilage is allogenic.

42. A method as claimed in claim 39 wherein said minced cartilage is autologous.

43. A method as claimed in claim 39 wherein said assembly includes an additive consisting of one or more of a group consisting of growth factor, human allogenic cells, human bone marrow cells, demineralized bone matrix, cartilage, and insulin.

44. A method as claimed in claim 39 wherein said bioabsorbable carrier is taken from one or more of a group consisting of sodium hyaluronate, gelatin, collagen, chitosan, alginate, buffered PBS, Dextran or polymers.